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Clementine orbits into history

By Anne M. Stark
NEWSLINE STAFF WRITER

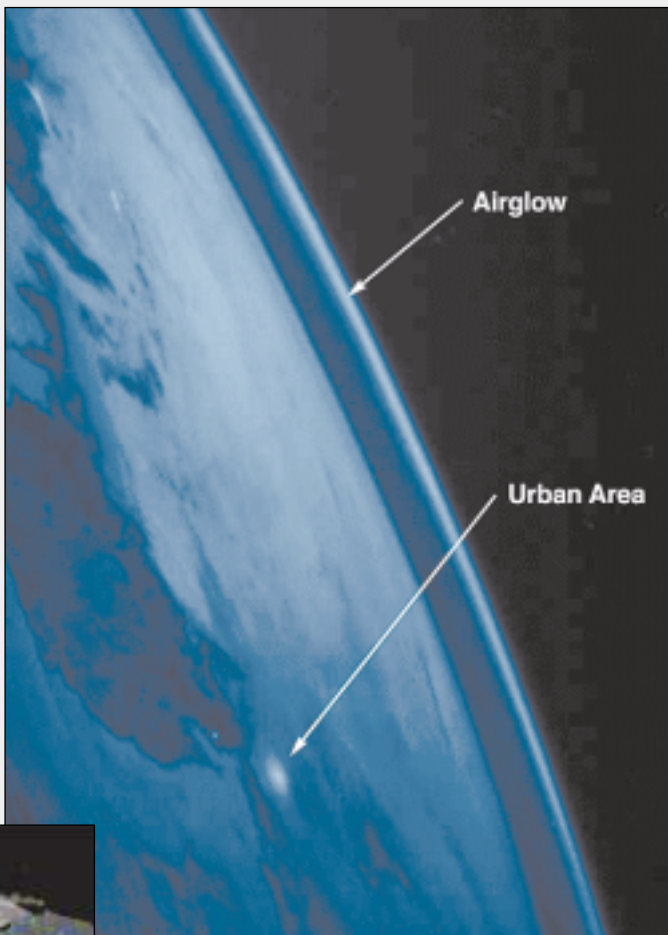
It started out as a sketch on a cocktail napkin in a Washington D.C. bar in the fall of 1989.

But about five years later, the Clementine satellite was on its way to a 70-day orbit of the moon, mapping and photographing in great detail the entire lunar surface.

On the nine-year anniversary of Clementine's launch date, the spacecraft is now in its new home in the Smithsonian National Air & Space Museum in Washington, D.C.

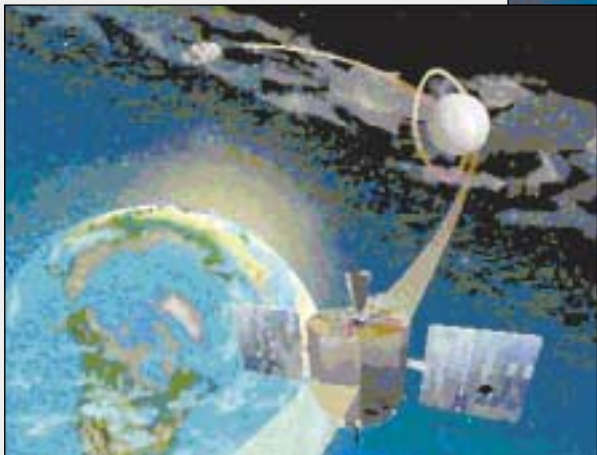
A replica of Clementine (also known as Deep Space Probe Science Experiment — DSPSE) with some of the original's backup sensor components that Livermore developed is already on display in the museum.

See CLEMENTINE, page 7



The Clementine satellite spent 70 days orbiting the moon in 1994 mapping and photographing the lunar surface. The satellite also returned Earth images, including this crescent slice of the Earth (above).

An artist's rendering (left) of the Clementine mission illustrates the final plan that used the moon and a near-Earth asteroid to demonstrate light-weight component and sensor performance.



Internationally known geneticist named director of Joint Genome Institute

By Charles Osolin
NEWSLINE STAFF WRITER

Edward M. (Eddy) Rubin, an internationally known geneticist and medical researcher, has been named director of the Joint Genome Institute (JGI). Rubin was also named director of the Genomics Division at Lawrence Berkeley National Laboratory.

Rubin, who had been serving as interim director of JGI since spring 2002, was selected for the position after a nationwide search. LBNL Director Charles V. Shank announced the appointment on behalf of the three University of California laboratories that manage the JGI: LBNL, Lawrence Livermore National Laboratory and Los Alamos National Laboratory.



Edward Rubin

"Dr. Rubin's international reputation in genomics studies makes him an ideal candidate" for the JGI directorship, Shank said. "All of us (at the DOE laboratories) owe him a tremendous debt of gratitude for his exemplary leadership thus far, and I know I speak for all of us when I express optimism and excitement about the possibilities for the future."

Rubin said he was "enormously enthusiastic and optimistic" about the JGI's "unique capabilities and strengths" — not only for its world-class genome sequencing capacity but also for its emerging role as a cutting-edge biological research center. One immediate goal for the JGI, he said, would

See JGI, page 8

New spin on buckyball potential

By Don Johnston
NEWSLINE STAFF WRITER

A theoretical study designed to challenge a couple of Laboratory summer students has brought a variation on the buckyball — the molecule of perfect "soccer ball" symmetry, hollow core and super material potential — bouncing back into science news.

The new study by Lab chemist Riad Manaa, high school student David Sprehn and undergraduate Heather Ichord was published in the November issue of the Journal of the American Chemical Society.

Buckyballs are carbon 60 (C60), a "harder than diamond" super material discovered in 1985 and named for Buckminster Fuller, the innovative architect known for his symmetri-

cal geodesic designs. Buckminster fullerenes, or buckyballs, earned its discoverers a Nobel Prize and intrigued the scientific community with a wealth of possible applications in medicine and industry.

Under Manaa's guidance, Sprehn and Ichord performed an analysis of work published in the Nov. 26, 2001 Physical Review Letters by an outside group of chemists, who synthesized an onion-structured, nitrogen substituted fullerene material. Researchers proposed that the structure of its core "soccer ball" — carbon 48 nitrogen 12 — contained evenly spaced nitrogen atoms, one in each pentagon of carbon.

Such a structure, containing two all-carbon hexagons, derives its stability from the even separation of nitrogen atoms by carbon atoms.

See BUCKYBALL, page 8

Energy secretary announces the U.S. will seek to rejoin international fusion project

President Bush has decided that the U.S. will join the negotiations for the construction and operation of a major international magnetic fusion research project, U.S. Secretary of Energy Spencer Abraham announced Wednesday.

Known as the International Thermonuclear Experimental Reactor (ITER), the project's mission is to demonstrate the scientific and technological feasibility of fusion energy.

"This international fusion project is a major step towards a fusion demonstration power plant could usher in commercial fusion energy," Abraham said. "ITER also provides a cost-effective way to proceed with fusion research worldwide with the collaborating parties sharing in the project's

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Awards for
Lab videos

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Science On Saturday
to kick off

— Page 5

work & life
BALANCE



— Insert



LAB COMMUNITY NEWS

Weekly Calendar

Technical Meeting Calendar
on page 4

Wednesday
5

Dell and Government Micro Resources (GMR) representatives will be at the Lab from 9-11:30 a.m. in the South Cafeteria for a **Dell technology showcase**.

The new OptiPlex, Latitude, and Precision computer systems; flat panel monitors; and personal digital assistants (PDAs) will be on display. Dell product experts will answer your questions about Dell technology and product trends. Contact: Candace Gittins, gittins1@llnl.gov.

Friday
7

All entries for the 2003 **R&D 100 Awards**, final submissions with photos and videos are due today. Please have your 10 originals and four copies along with your Document Release Form approved by your AD office and an appropriate ADC to Lisa Chartrand. Contact: Lisa Chartrand, 2-2297 or chartrand1@llnl.gov.

...
California Casualty Insurance will be in the Benefits Office. Appointments are required and may be scheduled by calling 2-9955. California Casualty offers individual rates to Lab employees by payroll deduction for auto and homeowner/renter insurance. As with any employee-paid insurance coverage, employees are encouraged to comparison shop.

...
Up Coming
A representative from the **Social Security Administration** will be at the Lab on Tuesday, Feb. 11, from 1:30-2:30 p.m. in the Bldg. 361 auditorium to discuss benefits available to those covered by Social Security. This one-hour presentation will cover such things as social security and retirement, disability, survivor benefits, Medicare and much more. This presentation will provide participants with the opportunity to ask questions of experts who are familiar with the complexities surrounding this benefit. Contact: Benefits Office, 2-9955.

...
Up Coming
The Benefits Office is offering a workshop on the fundamental principals of investing titled, **"Basic Investment Planning and Saving."** The next session will be held on Wednesday, Feb. 12, from 8:30-11:30 a.m. or 1-4:30 p.m. in the Training Center. The workshop provides participants with the necessary information to assess the risks and potential rewards associated with a wide range of investment choices. Cost is \$45. Pre-registration is required. Register by visiting the Benefits Office Website at www.llnl.gov/jobs/benefits and click on Seminars/Workshops or call the Benefits Office at 2-9957.

...
Some people experience times of **low moods**, but continue to work. If you have this struggle and would like to belong to a group that offers encouragement and suggestions for coping, there is an opportunity at the Laboratory. It is completely confidential. If you would like more info, contact EAP psychologist Kay Gorsuch, at 3-4237.

Fun with science



SCOTT WILSON/PUBLIC AFFAIRS

Fourth and fifth-grade students from the Valley Montessori School in Livermore look on as Will Coleman, a tour guide in the Public Affairs Office, demonstrates an earthquake simulation in the Lab's new Discovery Center. The students were visiting the Lab as part of the Public Affairs Office's new school tour program, which includes a Fun With Science presentation, a tour of the Discovery Center and an overview of the Lab and careers in science. The school tour can be booked on Mondays, Wednesdays and Fridays. To date, schools from Livermore, Pleasanton, Dublin and San Ramon have participated. For more information, contact Linda Lucchetti, 2-5815.

Volunteers needed for Pleasanton fun fair

Volunteers are needed to interview elementary and middle school students about their science fair projects on Wednesday, Feb. 19, from 9 a.m. to 12:30 p.m. for the annual Pleasanton Unified School District's Science Fun Fair.

The Pleasanton Unified School District serves more than 11,000 students in kindergarten through eighth grade. Science projects will be evaluated at all nine district elementary schools and the three middle schools. Student participation is voluntary but the district needs 175 volunteers to evaluate approximately 2,500 projects.

"We are looking for professionals, scientists and engineers who are willing to interview students and provide positive, encouraging and supportive

comments. Interviews will not be used for competition, recognition or grading," said Karen Rodriguez, coordinator of the fair.

Each student will receive a button, ribbon and personalized certificate. The goal of the interview process is to reinforce the pride of students in their individual effort and to allow them to have fun presenting their project while gaining experience and confidence.

All student projects will be on display on Thursday, Feb. 20, at the Alameda County Fairgrounds along with 40 corporate exhibit booths.

For more information or to sign up, contact Karen Rodriguez at sciencefunfair@aol.com or 846-3723.

Lab's Discovery Center seeks volunteer docents

The Public Affairs Office is looking for retirees to serve as volunteer docents, on an on-call basis, in the Lab's newly renovated Visitor Center, now called the Discovery Center.

If you are interested in welcoming visitors and sharing your knowledge of the Laboratory's rich past and scientific achievements, call Linda Lucchetti at 422-5815.

IN MEMORIAM

Clement Butler

Services have been held for Clement "Clem" W. Butler, 62, of Manteca, who died Dec. 24.

Butler was born and raised in Oakland, and worked as a Teamster for 25 years before starting at the Laboratory in January 1983. Butler worked for Transportation at Site 300 for 18 years until he retired in October 2000.

Survivors include his wife, Jaci; children, Kim, Steve, Rena and Kris; five grandchildren and two sisters.

Contributions in his memory may be made to the Remodel/Restoration Project at St. Anthony's Catholic Church, 505 E. North St., Manteca, 95336 in care of Father John Lindsay.

Newsline

Newsline is published weekly by the Internal Communications Department, Public Affairs Office, Lawrence Livermore National Laboratory (LLNL), for Laboratory employees and retirees.

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NEWS YOU CAN USE



Laboratory Women's Association names new officers

The LLL Women's Association recently elected its new officers for this year. They are Marina Gonzalez, president; Chelle Clements, vice president; Linda Farber, treasurer; and Christine Bell, secretary.

Gonzalez is the newly appointed division leader for the Lab's Recruiting & Employment Division in the Administration & Human Resources Directorate. Prior to joining the Lab in 1994, she was staffing manager at Lawrence Berkeley National Laboratory.

Clements works on the Nuclear Weapons Information Project in B Division and has been at the Lab for nearly 20 years. Previously she worked for the Kaiser Aluminum Center for Technology and served with the U.S. Army in Germany.

Farber has worked at the Lab for 20 years. She currently works in Computation, supporting ChemTrack within EPD.

Bell is a division secretary within the Energy and Environment Direc-



FRANK NUNEZ/IBIS

The new officers of the LLL Women's Association are, from left, Christine Bell, Marina Gonzalez, Chelle Clements and Linda Farber.

torate. She joined the Laboratory in 1989 and

also has worked in Physics and Lasers.

The officers, who were officially installed last month, are hoping to make the association more visible this year by bringing in more outside speakers and participating in community service to the Lab, in addition to its annual scholarship awards.

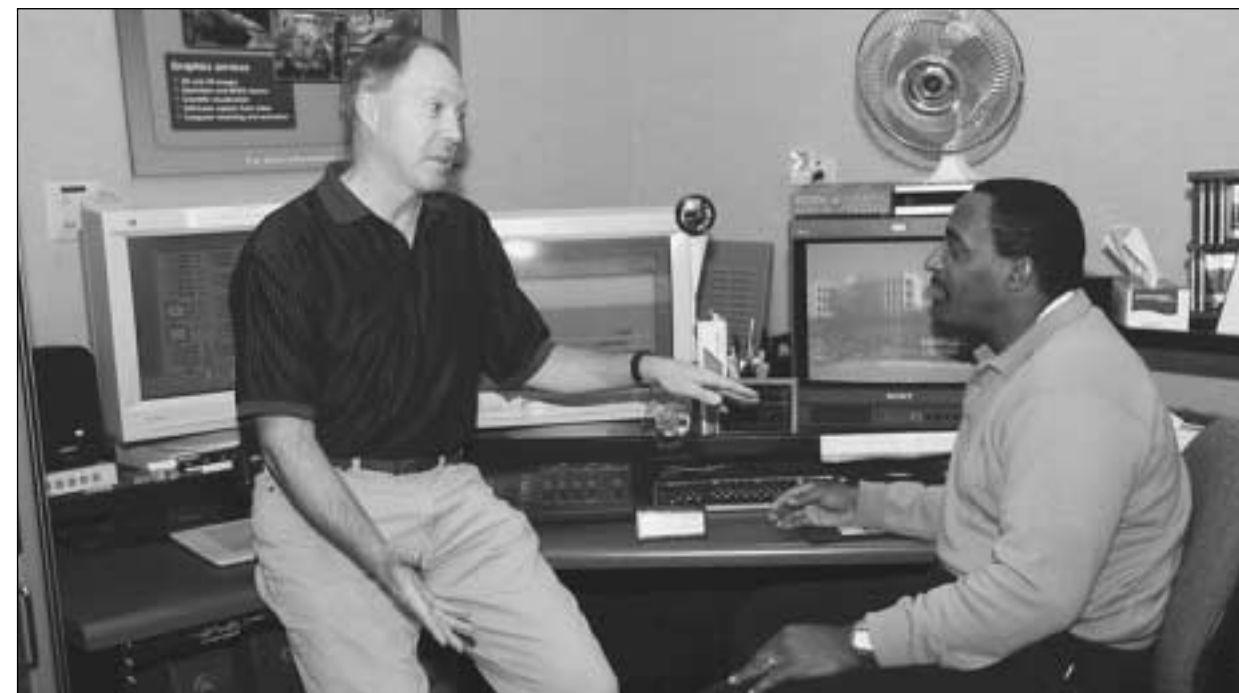
Among the goals for the coming year: bring in a diversity of speakers, partner with other Lab groups and revisit mentoring.

Additionally, the new board hopes to address a number of interest areas identified by its members in a survey taken last summer.

"The biggest concern was women's health issues. We're hoping to bring in some speakers to talk about that," Clements said. "Other interest areas identified included money management and investment, and the Lab's career work/life balance initiatives."

For more information about the LLLWA, contact membership chairperson Dianne McGovern, 2-9771.

Awards honor LLTN video work



DON JOHNSTON/NEWSLINE

Bob Schanilec and Donald Harrison of Lawrence Livermore Television Network recently received national and international recognition for their video productions.

Video productions for the Laboratory's 50th anniversary have earned national and international recognition for the Lawrence Livermore Television Network.

Bob Schanilec of LLTN earned a Crystal Award of Excellence from the Communicator Awards 2002 Video Competition for his editing and videography work on the video "Fifty Years of Innovation in Nuclear Weapon Design," commissioned by the Defense and Nuclear Technologies Directorate. He earned a second Award of Distinction for the Laboratory anniversary video, "Making History — Making a Difference."

"It's very gratifying to receive this recognition from the industry and I'm also indebted to all those who contributed to these projects," said Schanilec.

Donald Harrison of LLTN also earned an Award

of Distinction from the Communicator Awards in the "External Communications/Meeting Opener" category for "Beyond Boundaries," a video about the Lab's supercomputing program produced for the 2001 Supercomputing Conference in Denver.

In addition, Schanilec has received an Aegis Award for his production work on "Making History — Making a Difference." The Aegis Awards are the video industry's premier competition for peer recognition of outstanding video production and non-network TV commercials.

The Communicator Awards is an international awards competition that recognizes outstanding work in the communications field. Entries are judged by industry professionals who look for companies and individuals whose work serves as a benchmark for the industry.

BRIEFLY

Durham elected AGU fellow

Bill Durham of the Geophysics and Global Security Division of the Earth & Environment Directorate has been elected a Fellow of the American Geophysical Union. Durham will be honored at the upcoming Spring AGU Meeting in Nice, France.

Durham has been a member of the AGU since 1970, and is affiliated with the Tectonophysics Section. Among Durham's many contributions to geophysics, he is probably best known for his work on the rheology of ice, for synthesis of methane hydrates in the laboratory, and careful laboratory measurement of the physical properties of rocks and minerals, as well as the recent work on metals for his Deformation-DIA project.

The AGU awards fellowships to scientists who have attained acknowledged eminence in one or more branches of geophysics. AGU elects no more than 0.1 percent of its membership as fellows.

New salary listings available

Salary listings are now available in the Benefits Office, Bldg. 571, room 1205.

There is no charge for the listing but there is a limit of one per customer. The Benefits Office is open from 8 a.m. to 4:45 p.m.

Military students need mentors

More than 60 military academy students have applied for summer appointments at the Lab. Their applications are available at <http://education.llnl.gov/mentors>. Leveraged funding is available.

For more information, contact STEP internship manager Barry Goldman, 2-5177 or goldman1@llnl.gov.



NEWS YOU CAN USE

Livermore Computing to shut down temporarily

Livermore Computing will shut down power in four buildings from 7 a.m. Friday, Feb. 7, to noon Monday, Feb. 10, for routine maintenance and systems review affecting some services.

Every three years, Livermore Computing (LC) shuts down all power in buildings 113, 115, 116, and 117, where most of the LC computers, network equipment and other equipment are located. During this power outage, about 100 people will thoroughly check all electrical systems for safety and reliability and replace some equipment. Services affected include:

- LADS, the classified LLNL document accounting system
- All LC computers on the open and closed network, including CASC home directories and the lc.llnl.gov Web server (open and closed)
- OCF and SCF network and all equipment



attached to it, plus DisCom network (classified fast network connection to New Mexico)

• DNS (Domain name service), NTS, SSH and FTP will be down to LLNL on SecureNet, affecting some other local closed networks both on- and off-site.

Open LabNet services, including access (also off-site access), email servers and network services, will not be affected by this work. The Open LabNet equipment located in the area of the power outage will remain functional using portable generators.

For the most up-to-date information, please see <https://lc.llnl.gov/computing/news/1Bnews/LC.down> (requires an LC account and login to view this Web page).

The LC Hotline will close at noon Friday, Feb. 7. LC Operations will be available at 2-4531.

ABLE scholarship fundraiser celebrates Valentine's Day

The Association of Black Laboratory Employees (ABLE) will host its annual Valentine's Day Scholarship fundraiser on Thursday, Feb. 13. For a \$12 donation, you'll receive each of the following: a stuffed animal, one 18" Mylar Balloon with "Happy Valentine's Day" and a See's truffle in a decorative box.

Only a limited number of items will be available and pre-orders must be placed by Tuesday, Feb. 11. All proceeds benefit ABLE's scholarship fund.

Contact Pearlina Williams, holtonwilliams1@llnl.gov, or Lisa Rashidi, rashidi2@llnl.gov, to place orders.

Pickup will be on Thursday, Feb. 13, in Bldg. 571, room 2229, between 11:30 am and 1:30 pm. There will be a variety of Valentine's Day gifts to choose from. Please come early for best selection.

A payment of cash or check (payable to ABLE) can be made upon pickup.

This fundraiser is supported by the Diversity and Worklife Programs Office.

Technical Meeting Calendar

Monday
3

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Software Quality Process: Is it a Square Peg in a Round Hole?" by Stan Rifkin, Master Systems.

10:30 am, Bldg. 543 auditorium (uncleared area). Contact: Nancy Storch (CADSE), 2-8942, or Leslie Bills, 3-8927. For more information see <http://www.llnl.gov/casc/calendar.shtml>.

CHEMISTRY & MATERIALS SCIENCE/ MATERIALS SCIENCE AND TECHNOLOGY DIVISION

"Nanometer-Scale Studies Of Interdiffusion And Segregation In Semiconductor Structures," by Bogdan Lita, Agere Systems, Optoelectronics Center. 10 a.m., Bldg. 235, Gold Room. Contact: James McNaney, 3-9553, or Rebecca Browning, 2-5500.

Tuesday
4

PHYSICS AND ADVANCED TECHNOLOGIES DIRECTORATE-WIDE SEMINAR SERIES

"Low Emittance, Picosecond

Electron Bunch Production for the LLNL PLEIADES Compton X-Ray Source," by Winthrop J. Brown. 2 p.m., Bldg. 123 conference room A (uncleared area). Contact: Ralph Jacobs, 4-4545, or jacobsb6@llnl.gov. Additional details on the PAT directorate-wide seminar series can be found on the PAT internal Web site at <http://www-pat-r.llnl.gov/>.

PHYSICS AND ADVANCED TECHNOLOGIES DIRECTORATE POST DOCTORAL PROGRAM FORUM

"Density Functional Theory *Ab Initio* Calculations of Solids and Liquids Under High Pressure," by Stanimir A. Bonev. 1:30 p.m., Bldg. 123 conference room A (uncleared area). Contact: Ron Soltz, 3-2647, or soltz1@llnl.gov.

Wednesday
5

LABORATORY SCIENCE & TECHNOLOGY OFFICE

"The Value of Early Detection in Biodefense," by Fred

Milanovich. 2 p.m., Bldg. 361 auditorium, room 1140. Contact: Karen Kline, 3-4348.

Thursday
6

UNIVERSITY RELATIONS

"First-Principles Design of Epitaxial Perovskite Heterostructures," by Lawrence Postdoc Fellowship candidate Jeffrey Neaton, Rutgers University. 10 a.m., Bldg. 219, conference room 163. Contact: Edie Rock, 4-4035.

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"The Institute for Mathematics and its Applications," by Douglas Arnold, University of Minnesota. 3 p.m., Bldg. 451, room 1025 (property protection area). Contact: Xabier Garaizar (CASC), 3-1521, or Leslie Bills, 3-8927. For more information, see <http://www.llnl.gov/casc/calendar.shtml>.

Friday
7

CHEMISTRY & MATERIALS SCIENCE/MATERIALS SCIENCE & TECHNOLOGY DIVISION

"Processing of Interstellar Dust," by A.G.G.M. Tielsens, Kapteyn Astronomical Institute, Groningen, The Netherlands & Astronomy Department, UC Berkeley. 3:30 p.m., Bldg. 235, Gold Room. Coffee and cookies will be served at 3:20 p.m. Contact: Tom Felter, 2-0600, or Rebecca Browning, 2-5500.

R&D 100 AWARDS FINAL SUBMISSIONS DUE

For those who are submitting entries for the 2003 R&D 100 Awards, final submissions with photos and videos are due on Friday, Feb. 7. Please have your 10 originals and four copies along with your Document Release Form approved by your AD office and an appropriate ADC to Lisa Chartrand. Contact: Lisa Chartrand, 2-2297 or mail to chartrand1@llnl.gov.

PHYSICS & ADVANCED TECHNOLOGIES/ V-DIVISION SEMINAR

"Ultra-Short Pulse Laser Experiments on Gold Targets: Boiling Gold," by Dick More, NIFS. 10 a.m., Bldg. 319, room 205. Contact: Stefanie Landes, 2-3201.

Thursday
13

CHEMISTRY & MATERIALS SCIENCE

"Water Technology for the 21st Century," by Dana Christensen, principal deputy associate director, Energy and Environment Directorate.

Noon, Bldg. 151, Stevenson Room (room 1209), property protection area. Contact: Tony Esposito, 4-3497, or Linda Jones, 3-8839.

Friday
14

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Efficient Discovery of Previously Unknown Patterns and Relationships in Massive Time Series Databases," by Eamonn Keogh, UC Riverside. 10 a.m., Bldg. 451, room 1025 (property protection area). Contact: Ghaleb Abdulla (CASC), 3-5947, or Leslie Bills, 3-8927. For more information, see <http://www.llnl.gov/casc/calendar.shtml>.

February
20

LIVERMORE COMPUTING WORKSHOP

"VGV, a Performance Analysis Tool for OpenMP+MPI." 9 a.m. – 4 p.m., Computation Training

Center, Trailer 1889. Register by Feb. 14. The purpose of this seminar is to show developers at the Lab how to use VGV. Hands-on exercises will be provided. Contact: LC hotline, 2-4531, or lc-hotline@llnl.gov. For agenda and registration information see Web page, <http://www.llnl.gov/computing/training/2003feb20.html>.

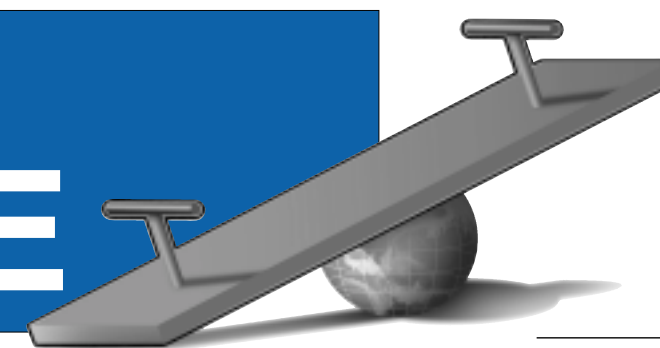
February
21

H DIVISION SEMINAR

"Epitaxial Oxides on Si: Theory of the Atomic and Electronic Structure of the Si/SrTiO₃ Interface," by Alex Demkov, Materials Theory and Simulations, Physics Science Research Laboratory, Motorola, Inc. 10 a.m., Bldg. 319, room 205 (property protection area). Contact: Giulia Galli, 3-4223, or Darlene Klein, 4-4844.

The deadline for the next Technical Meeting Calendar is noon, Wednesday.

work & life BALANCE



A monthly supplement provided to employees as part of Survey Action Team Initiatives.



Update on the Survey Action Team

Tommy Smith

Employee survey initiatives continue to move forward

With the start of the New Year, I would like to bring you up to date on all that has been accomplished on the Survey Action Team Initiatives, and give you a look at where we're headed.

In the last few months, we have made a lot of progress on the recommendations that came from the Survey Action Teams and we're working diligently to move forward on a number of initiatives.

The Laboratory is committed to improving the workplace based on the results of the employee 2001 survey, "Assessing the Workplace," and is committing the necessary resources to get it done.

As you may recall, a number of recommendations came from the Survey Action Teams, which were then presented to senior management. More than 25 initiatives were identified and project managers from throughout the Laboratory were assigned to each one. The complete list of projects is available on the Web at: <http://www-r.llnl.gov/sat/index.html>

One of the first results of the survey was the start of this four-page monthly insert devoted to work/life issues as well as communicating progress and matters of interest relating to the employee survey. The section, which started last July, now appears as a "pullout" on the last Friday of each month and features a variety of stories, employee profiles and a month-at-a-glance listing of events and resources to help employees balance their working world with their everyday lives.

A Web guide is now available that details what work/life services are available, both within and outside the Laboratory, and how to find them. The "Work Life Web Guide" is located at: http://eodd-server.llnl.gov/Work_life_guide/index.html and is designed to help employees better understand work/life issues and provide information on the services

SAT, See WORK LIFE INSERT page 4



Elizabeth Campos Rajs/Newsline

Frank Robles recently received the highest honor from the Society of Mexican American Engineers and Scientists, the "Medalla de Oro," for his extensive recruiting work.

OUTreach efforts honored

By Elizabeth Campos Rajs
Newsline staff writer

For the last seven years, Frank Robles has spent one weekend a year recruiting promising young Mexican-American scientists and engineers to the Laboratory by attending a national conference and talking up the Lab's programs.

His work has paid off. Sixteen of the students he helped recruit and fund were ultimately hired by the Laboratory as full-time employees.

In recognition of his outstanding efforts, the Society of Mexican American Engineers and Scientists (MAES) recently presented him with its highest honor, the "Medalla de

Oro," or gold medallion. The prestigious award is bestowed on members and supporters of the organization "who have distinguished themselves by demonstrating a dedication to serve and to greatness, a kind of dedication to humankind that carries with it responsibilities and strict disciplines," according to the MAES award.

Robles, who recently moved from Affirmative Action & Diversity Programs to help start the new Employee Relations Office, was one of three recipients nationwide to receive this honor.

"It was very nice to receive this award," said Robles, who has worked at the Lab for

OUTREACH, See WORK LIFE INSERT page 4

New facilitator for the benefit of employees

The Laboratory has a new Health Care Facilitator Program in the Benefits Office to help employees and retirees who have questions about their UC-sponsored health plans.

Johnetta Jones has been hired as the Lab's first health care facilitator and she is available to assist employees and retirees by providing information about UC health plan coverage; explaining use of plan benefits and how they coordinate with Medicare benefits; and intervening to resolve problems of coverage, access and administrative processes.

She provides confidential, one-on-one assistance for employees and retirees, and it's her job to help people obtain the full ben-

efits and services available from their UC-sponsored medical plans.

Hiring a benefits advocate to assist employees, retirees and family members was one of the recommendations of the Survey Action Team.

Employees and retirees who have questions about their health plan coverage or who need help resolving problems with their medical plan coverage should contact Jones. She can be reached at 2-9955 or jones173@llnl.gov.

For more information about the Lab's Health Care Facilitator Program, go to <http://www.llnl.gov/llnl/02employment/benefits/benefits.htm>

AFTER HOURS AND February 2003 **in between**



Valentine's Day will be here soon!
Get your cards and candy at the Time
Zone while supplies last.

The Time Zone is open Monday
through Friday, 7:30 a.m.-3 p.m.,
in Trailer 4128.



The U.S. flag is mounted
on the outside of the Lab's
Superbloc.

4 TUESDAY



By learning how to "Manage the Moment,"
the moments of your life will add up to
improved performance, better relation-
ships, excellent health and an overall
reduction in stress. This two-day seminar
is scheduled for Feb. 4-5, at the Training
Center (T1879) from 8:30 a.m. to 4:30
p.m. Contact: Marissa Mertes, 2-4842.

5 WEDNESDAY

Check out the Rubber Stamping Net-
working Group today at noon in Bldg.
571, room 1301 and make a heart-felt
valentine for someone special.

6 THURSDAY

Tickets are still available this week
for Disney on Ice and Toy Story 2 in
the LLESA Office, Bldg. 415. (These
tickets are for the Feb. 15, 11:30
a.m. performance.)



10 MONDAY

"Food for Your Soul" Part I and cele-
bration potluck, an opportunity for
ABLE members and supporters to
come together, will take place at
11:30 a.m. in Bldg. 361, room 1155.

11 TUESDAY

A representative from the Social Security
Administration will be at the Lab today from
1:30 p.m. - 2:30 p.m. in the Bldg. 361 auditori-
um to discuss benefits. Contact: Benefits
Office, 2-9955.

A representative from Fidelity Investments
will be on-site Feb. 11-12 and 18-19. Con-
tact: 1-800-642-7131.

The LLESA Bowling League begins today.

12 WEDNESDAY

For your benefit, check out the workshop
on "Basic Investment Planning and Sav-
ings." It will be held from 8:30 a.m. - 11:30
a.m. or 1 p.m. - 4:30 p.m. in the Training
Center. Cost: \$45. Pre-registration
required. Register at www.llnl.gov/jobs/benefits
or call 2-9957.



Lincoln's Birthday

13 THURSDAY

Karats Jewelry will be at the LLESA
Office today: Bldg. 415, room 103. A
Costco rep will also visit the Time Zone
from 10 a.m. to 2 p.m. today in Trailer
4128.

The "Sweet Tooth Valentines Fundrais-
er" by the Lab's diversity groups will
take place from 11:30 a.m. to 1 p.m. at
the Central Cafeteria.

14 FRIDAY Valentine's Day



Planning to ski during the upcoming holiday
weekend? The Time Zone has discount lift
tickets to Northstar, Sierra At Tahoe, and
Kirkwood.

17 MONDAY

President's Day
Lab Holiday



18 TUESDAY

The Community Service Networking
Exchange Club will meet at noon in
the Bldg. 323 third floor conference
room. Anyone is welcome to attend.

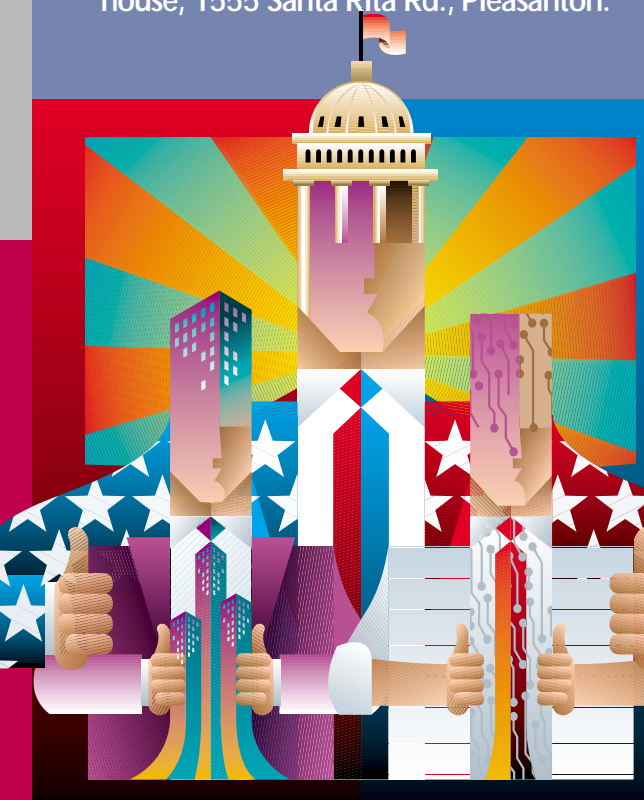
19 WEDNESDAY

It's time to talk apples at the Macintosh
Technical Seminar Series meeting today at
10:30 a.m. in the Bldg. 543 auditorium.

Need new exercise and danceware duds?
Check out the LLESA sale today from
10 a.m. to 2 p.m. in Bldg. 415.

20 THURSDAY

Find out about "Protecting What's Ours:
The Loss of U.S. Technology to Competi-
tors" by Wayne Morris, Wackenhut Ser-
vices, Inc., 7 p.m. Amador High School Play-
house, 1555 Santa Rita Rd., Pleasanton.



21 FRIDAY

Today's a good day to book your on-
site chair massage: Call 424-5321
to schedule an appointment.

Washington's Birthday



25 TUESDAY

Learn more about the challenge of parenting by attending today's noon
Parenting Class in Bldg. 671, room 2000.



27 THURSDAY

Joseph E. Marshall, Jr., founder of the
Omega Boys Club/Street Soldiers pro-
gram, will give an inspirational presen-
tation at noon (location to be deter-
mined). Contact: Michele Cardenas,
3-2796.

28 FRIDAY

In today's changing economy, it's
more important than ever to take
advantage of your 403(b) benefits
options. Attend today's meeting
at 12:15 p.m. in Bldg. 571,
room 2301.

Symposium on creating balance, peace and wellness

Las Positas College is presenting a symposium on "A Celebration of Life: Creating Balance, Inner Peace and Wellness" on Saturday, March 8, from 9:30 a.m. to 3:30 p.m. at the college.

The presenter is Joan Bory-



senko, author of "Minding the Body, Mending the Mind," "Fire in the Soul," "A Woman's Book of Life," and most recently, "Inner Peace for Busy People." She is also a nationally known lecturer who brings science, medicine, psychology and spirituality together

in the service of healing.

Tickets are \$30 and are available by sending a check payable to "LPC Symposium" to "A Celebration of Life" Symposium, Las Positas College, 3033 Collier Canon Road, Livermore, CA 94551-7650.

Seating is limited and postmarks will be observed. ■

SAT

Continued from Work Life Insert, page 1

available to employees that relate to those issues.

Other initiatives put into place since last July include:

- **UPS Service.** The UPS service started at LLESa's "Time Zone" has proven very successful with employees. Since it started last June, more than 2,247 packages have been shipped by employees. This service was particularly helpful during the holiday season, with more than a third of the packages (809) shipped during the month of December. Employees have been able to receive UPS packages on site since the receiving service began on Oct. 18. More than 205 packages have been received since that time.

- **Convert Lab store.** The former site of the Lab store has been converted for employee use. The front portion of the building is now a beautiful studio for yoga and mind/body classes. The back portion is meeting space for employee networking groups. Employees interested in making arrangements to use the space should call 2-9402.

- **Total Benefits/Compensation Estimator.** In November, a "total compensation estimator" was added to the Benefits Office Website that enables employees — and prospective employees — to type in an estimated salary and see the approximate monetary worth of the corresponding benefits that should be included in determining the

value of their "total compensation." This recommendation was offered by the Pay, Benefits and Recognition Survey Action Team as a way of offering a more complete perspective on the total rewards that Laboratory employment provides. The compensation estimator is available online at: <http://www.llnl.gov/llnl/02employment/benefits/estimator.html>

- **Flexible Work Options.** The Laboratory implemented new comprehensive Flexible Work Options Policies in October, which allow alternate work schedules (4/10s, 9/80s), flexible work hours, temporary schedule changes, flextime and telecommuting. Employees must receive approval from their organization to participate in an alternate work schedule. In the first phase, more than 1,400 employees Labwide participated in flexible work schedules. Additional information about the policies is available on the Web at <http://www-r.llnl.gov/fwo>

- **LDRD Quick Review.** A new program that creates a faster review cycle was implemented last summer. This program was well received. The LDRD office will communicate further plans later in the year.

- **Apprenticeship Program.** After a 10-year absence, the apprentice programs in Manufacturing & Materials Engineering Division and Plant Engineering's Maintenance and Operations Department were restarted in December with the hiring of two and 24 new apprentices respectively. A Survey Action Team assigned to address issues identified by 800- and 900-series employees made the apprenticeship program one of its major recommendations.

OUTREACH

Continued from Work Life Insert, page 1

nearly 16 years. "It's a tribute to the Laboratory and its interest in supporting these students. I hope the Lab will continue to do this type of outreach."

Jose M. Hernandez, who is president of MAES, said Robles' efforts have helped increase the awareness of opportunities in science for minority youth.

"Frank has been very supportive of the organization. The Laboratory also has been a big supporter, largely due to Frank's efforts," said Hernandez, a Lab employee on leave to NASA. "He goes the extra step. He not only represents the Lab as a recruiter at the conferences, but then he works with the programs to get those people placed. He can take personal credit for all 16 of those hires."

Yahel De La Cruz, a software engineer in NIF Information Systems, is one of the students Robles attracted to the Lab.

"I attended the conference in 1997 and since I'm from Stockton, my first stop was the Lab booth. I talked to Frank for a long time and ended up coming to the Lab as a summer student," De La Cruz recalled. "I worked here two summers and then was hired after I graduated. Every summer, Frank met with all his students to make sure things were going well and we were comfortable where we were working. He made sure we were happy, which is why we came back to work here."

While he was deputy director of AADP, Robles initiated the Laboratory's participation at the MAES conference. In addition to setting up a booth each year at the conference's career fair, the Laboratory also helped sponsor the conference the year it was held in Santa Clara.

The restart of the program has been widely endorsed by Laboratory employees from both organizations.

- **Benefits Hotline Advocate.** The Laboratory hired Johnetta Jones as its first health care facilitator. Her job is to help employees and retirees resolve medical insurance issues and get the full benefits and services from their UC-sponsored health plans.

In the first quarter of this year, there are a number of initiatives that are scheduled for completion, including the Total Rewards Program — a video compact disc that discusses the total benefits of working at LLNL — an employee handbook and a dry cleaning pick-up and drop-off service. Plans are also underway to streamline the training requirements for postdocs and to reinforce the Lab's commitment to creating a culture that values rigorous debate in an atmosphere of respect. Other efforts that are also on schedule for completion are institutional practices for employee development and the implementation of a new performance management system.

As we continue to make progress on implementing the recommendations from the Survey Action Team, we will make every effort to keep you informed. In the meantime, please feel free to check the Website on our progress or call me for further information or comments regarding any of the survey projects.

Tommy Smith is deputy AD for Strategic and Diversity Initiatives. He is leading the effort to implement the survey initiatives. For more information, contact him at 2-6634 or smith80@llnl.gov

"It was a successful way to introduce Mexican American students to the Laboratory and to encourage them to come here," Robles said. "I really liked the students and enjoyed talking to them."

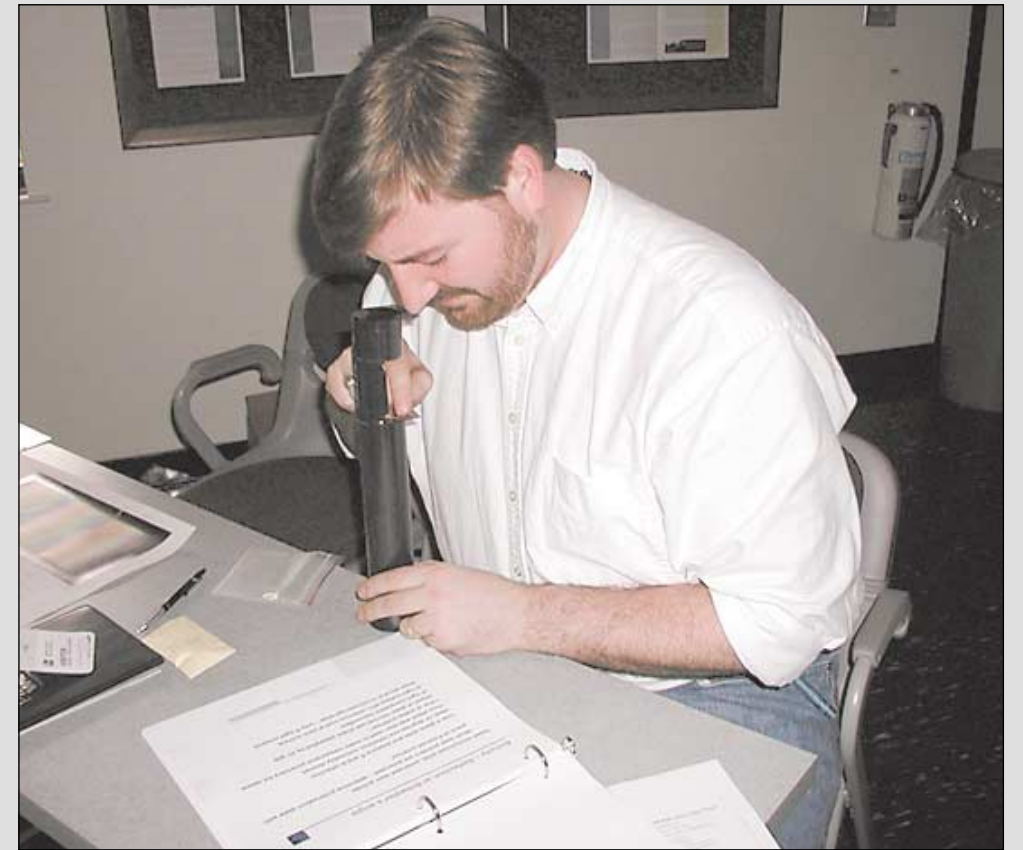
In addition to the medallion, a scholarship was presented to a MAES student in Robles' name. According to MAES, the "Padrino Scholarship" symbolizes the society's concept of building a bridge to the future.

"Padrino means godfather and with this scholarship, we pair up the award winners with outstanding students to create a mentoring relationship, and what we hope will be a life-long relationship," Hernandez said.

In his new role as deputy lead of the Employee Relations Office, Robles will no longer be attending the MAES conference as a recruiter, but is hopeful the Laboratory will continue to build on what he started. ■

Local teachers take a look at science

Aaron Glime, a science teacher at Berkeley High School, checks the polarization of a crystal using a polariscope that he built during a recent Saturday workshop for teachers at the Lab. More than 25 teachers from throughout California attended the one-day workshop, which was co-sponsored by the Lab, the International Society for Optical Engineering, and the California Photonics Consortium. The workshop, "Photonics Saturday for Teachers," was an extension of the Photonics West Conference sponsored by SPIE.



RICHARD FARNSWORTH/STEP

Science on Saturday kicks off with talk on harnessing light for medicine

By Elizabeth Campos Rajs

NEWSLINE STAFF WRITER

The Laboratory's eighth season of Science on Saturday — featuring talks on medical technologies, forensic science and astrophysics — kicks off on Feb. 8 with "Harnessing Light for Medicine: Creating New Biophotonics Tools for Doctors." The lecture begins at 9:30 a.m. in the Laboratory's Bldg. 123 auditorium.

Lab physicist Duncan Maitland, along with science teacher Susan Daly of the Athenian School in Danville, will focus on medical applications of light. Students will learn what light is, where it is currently used in medicine and how it might be used in the future. Maitland will also explain how different characteristics of light can cause everything from bioluminescence (like lightning bugs) to heating of tissues to cure diseases to lasers that create micro-explosions in blood vessels.

Science on Saturday is a five-week series of free 60-minute talks geared toward middle school and high school students. The series, which began in 1996, has proved to be tremendously popular, drawing more than 300 students, their parents and teachers from throughout the Bay Area to each lecture.

The series features Lab researchers talking about their cutting-edge science, noted Richard Farnsworth, who manages the education outreach

activities for the Lab's Science and Technology Education Program.

"Science on Saturday provides students with real world examples of how the science taught in the classroom is found in the 'Big Science' at the Lab. But the real excitement generated at Science on Saturday is felt, not seen, as these scientists share the passion they feel for their work. This excitement generates the heat that can spark a student's interest in science," Farnsworth said. "The focus of Science on Saturday is on students. We match experienced science teachers with the scientists to keep the presentations aimed at the interests of students and to keep the presentations aligned with classroom science."

This year's speakers represent a wide range of disciplines, including astrophysics, biotechnol-

ogy, chemistry and planetary physics.

The series is co-sponsored by Livermore Laboratory and the Livermore chapter of Sigma Xi, the Scientific Research Society.

The free lectures, which cover a wide range of topics from forensic science to massive galaxies, will be offered every Saturday, Feb. 8 through March 8, from 9:30-11:15 a.m. All of the talks will be in the Bldg. 123 auditorium and are open to students, their parents or guardians, and teachers. Registration is at the door and seating is available on a first-come, first-served basis, with priority given to students. Please note that all SOS visitors will need to enter the Laboratory through the southwest entrance on East Avenue this year.

For more information, including directions, on Science on Saturday, check the Website (<http://education.llnl.gov/sos>) or email the Lab's Science and Technology Education Program at education@llnl.gov



Here is the complete schedule for the 2002 "Science on Saturday" lecture series:

- **Feb. 8:** "Harnessing Light for Medicine: Creating New Biophotonics Tools for Doctors," by Duncan Maitland, LLNL science researcher, and Susan Daly, science teacher, Athenian School, Danville.
- **Feb. 15:** "Catching the Bad Guys: Forensic Science and its Application to National Security," by LLNL scientist Glenn Fox and biology teacher Kirk Brown of Tracy High School.
- **Feb. 22:** "How Astronomy Has Influenced Ancient Cultures: The Study of Archeoastronomy," by LLNL scientist Dave Dearborn and teacher Josh Holtzman of Monte Vista High School, Danville.
- **March 1:** "BRIGHT Lights, BIG City: How the Most Massive Galaxies and Black Holes Live Together," by research astronomer Wil van Breugel of LLNL's Institute of Geophysics and Planetary Physics, and science teacher Lawrence Dean of Athenian School, Danville.
- **March 8:** "Radiation in Medicine: How Radiation Can Cure Cancer," by LLNL physicist Christine Hartmann-Siantar and science teacher Sarah Palmer, Tri-Valley Regional Occupational Program.

Education committee seeks new members

The Institutional Education Committee, which plans the coming summer activities for all LLNL summer students, is looking for volunteers to serve as a point of contact for their department or directorate.

The committee meets twice a month until the beginning of summer. Subcommittees include: speakers and tours; socials; publicity; and panel discussions.

If you are interested in participating on this committee and representing your department/directorate as a point of contact for summer hires, contact Barry Goldman at 2-5177 or by email at goldman1@llnl.gov.



CLASSIFIED ADS

See complete classified ad listings at
<https://www.ais.llnl.gov/newsline/ads/>

AUTOMOBILES

1998 - Acura Integra GS, 4 cyl, 5 sp, leather upholstery, cd, fully loaded, alloy wheels, forest green, 59,000 miles, excellent cond. \$12,000. 209-830-8300

1995 - VW Golf 2.0, 5spd, moon roof, black on black, CD w/premium sound, new clutch & flywheel, runs well, \$3500 firm 925-447-0666

1997 - TOYOTA COROLLA DX - Good condition. 122K miles. \$4500 air/pow-er windows/cruise. Blue Book = \$4625 209-948-0286

1999 - Buick Regal GS, Black, lt grey leather interior. Great condition, extended warranty. Only 36k miles, all power, loaded. \$10,500 OBO. 209-835-9240

1993 - Geo Prizm LSI. 149K highway miles. 5-spd. 35-38 mpg. AC, cruise, PB, PS, PW, PL. 1 owner. \$2000. 510-338-0237

1995 - Ford Windstar. 137K miles. Good Condition. New engine, new tires, \$3900. 925-634-7513

1998 - Ford Mustang, Silver, spoiler, V6, CD stereo, tinted power windows, keyless alarm entry, new rear tires, new breaks, clean. \$6,900 obo. 925-964-0534

1993 - Honda Accord LX 4-dr sedan. Excellent condition, 84,000 miles, manual transmission, burgundy w/gray int., new tires, and more. \$5,900 OBO. 925-447-8251

1997 - El Dorado fully loaded, new tires, cd stacker, extra warranty. Excellent condition. \$19,000.00 510-582-2938

1985 - Camaro Berlinetta, 44k miles on rblt V-6, dk green, major stereo, \$1,600 obo 925-443-8889

1999 - Ford Explorer, XLT, 4WD, loaded, clean, tow package, Asking \$10.5K (KBB \$11.7K) 925-938-8720

1992 - Honda Accord LX coupe, 190K miles, excellent maintenance (Precision Auto), very nice condition, manual xsmn, A/C \$3000 (below Blue Book) 925-283-3824

1989 - Dodge Caravan, 5pd, A/C, 98K miles, runs great. \$1200. 925-426-8452

1984 - Toyota Camry runs ok, pager 510-889-4222 925-829-3175

1998 - Mercedes Benz 280 Sport - Immaculant, low miles, leather interior, sunroof, CD stacker, custom wheels, etc. \$24,300. 209-952-0877

1996 - VW Jetta - Excellent Condition. Sport wheels, spoiler, Sunroof, CD Stacker. Priced below bluebook @ \$5,200. 209-952-0877

1990 - Ford Bronco 4X4 w/tow. V8-196K miles, new tires. 6CD changer, White/maroon stripe, great condition. Documented maintenance. \$5000 OBO. 209-832-1009

AUTOMOBILE ACCESSORIES

Go-Cart, Dingo off-road by Manco. 5h engine, roll cage, single seat w/seatbelt, great condition \$600.00 or b/o 925-449-3934

4 Chrome SALEEN wheels for late model Mustang. (two each: 18x9 and 18x10) Excellent condition and look great. \$1,500 209-836-4793

Saturn SL/SL1/SL2 Snow Spike Spiders. Unused with all hardware and vinyl carrying case. \$150 925-447-9273

BICYCLES

Mens mtn bike, specialized hard rock, shimano shifter, good cond. \$75 925-443-2856

bike trainer - just attach you bike to this Minuri trainer to ride indoors.

BOATS

Adjustable tension for resistance. Cost \$125 new, first \$25 takes it. 925-455-4528

Classic 1958 woodie, 17ft inboard with trailer. Mahogany plank deck, 8cyl engine 373, call for pix. \$5000 obo. 925-560-9657

1995 Bayliner Trophy 23 ft. 150 HP Merc engine, radar, GPS, fish finder, low hours. \$15K 925-447-6728

CAMERAS

Olympus E-10 Digital SLR, 4 MP, macro converter, xtra battery pack, wireless and cable remotes, cir pol & UV filters. 128 MB CF. \$800. 510-226-7440

Camera Body, Canon AE-1, including 50mm and 35-105mm telephoto lens, flash attachment, \$150 925-447-6819

ELECTRONIC EQUIPMENT

eMachines 366mhz computer w/17 in. monitor, 192mb memory, 20gb hd. Win 98 installed. Great Condition. Just upgrading. \$375 or b/o. 209-983-8886

PS2 Game-Lord of the Rings Two Towers, got two for Christmas. \$40 OBO 925-292-0348

Magellan GPS companion spring-board module with software for Visor. Selling it b/c I lost my PDA. Price \$156.78, will sell for \$70 OBO. 925-924-1359

15 inch color computer monitor, speakers, keyboard, mouse. Near new condition. \$35. 925-245-0166

GIVEAWAY

Older freezer still in good condition. Has been used for extra food storage in the garage. Free! You pick up! 510-881-8536

Free once used moving boxes. Various sizes. 925-292-1249

Free Sports Trophies (Baseball, Soccer, Cheerleading). 209-823-0234

Intake manifold and valve covers for big block GM engine 925-447-6728

FREE!! King size waterbed with all essentials included - headboard, heater & mattress. 510-742-5556

HOUSEHOLD

Gun safe, 60hx29dx32w, store important papers, coins jewelry or other valuables. \$725 obo. 925-778-7433

Large Refrigerator for sale. Looks and works good. 25 cu ft, Frostless, white, double door, bottom freezer. \$120, OBO. Home phone: 209-832-4335

Two marble double sink tops, 21x92 beige swirl & 21x82 gold swirl. Each with 4 inch back splash. white cabinets too. \$45 each. entry door \$45. 925-938-4136

Dining set w/4 chairs drk wood/green accent \$75 Ashley loveseat like new green w/accnt throw pillows \$200 209-836-2658

Dryer, Kenmore electric, almond, very good condition \$90.00 925-443-5565

Matching oak coffee table and end table. Light color. Very solid. Great condition. Take the pair for \$100. 209-239-3293

Rototiller, 5 HP, old but reliable. Just in time for spring planting. \$50. 925-455-5655

King Head Board(\$100), Coffee Table(\$50), Full size desk(\$100), Computer desk(\$50), China cabinet&hatch, Dinign Room Table and Chairs(\$1500) 925-837-4331

Loveseat, green pattern, recently recovered, exc cond, \$75 925-447-2508

Two black leather chairs with side table \$150.00 925-829-3068

Dining room table with two leaves, 42x61 oval or 42 round solid wood chairs with padded seats. Like new \$200.00 925-447-6670

Bar stools, wooden, from Cost Plus, 24 inches high, cane seats, \$45 for the pair 925-846-8864

Oak table, 2 leafs, 8 chairs, with matching hutch. Good condition. Must sell. \$2,000 or best offer. Have pictures. 925-556-6162

MISCELLANEOUS

Camper shell by Brahma, blue, for \$10 pick-up. 6ft x 4ft. good condition, \$135.00 or b/o 925-449-3934

15 inch Six bolt Pickup TRUCK WHEELS, steel, 2 for \$30 Livmore 925-447-7070

Childcraft Baby Crib Beautiful Maple with Cherrywood accents on head/foot board. Good cond. \$195.00 OBO. 209-599-4049

25 Used 12ft 3-legged wooden picking ladders in good condition. \$20.00 each. Will sell one at a time. or 209-892-6993

Sofa and love seat. Older but in great condition. Blue and white stripe pattern. Just cleaned. Make offer. 209-239-3293

Moving boxes, all sizes. Paid over \$500, will sell for \$250 925-240-0794

Jenn Air counter top microwave, white, works great. \$50.00 B.O. 925-292-1785

Graco Car Seat, booster, 5 point harness, gd cond. \$8 925-447-2508

10 inch compound miter saw. Brand new. Still in the box! Great deal at only \$50! 510-881-8536

2 tickets to The Producers a Mel Brooks musical at the Orpheum Theatre, 8pm Wed April 2. Orchestra seats Row X seats 14&15, \$169.50 925-443-5693

Comb bookbinder with supplies \$45.00, pair of Fischer speakers \$35.00, 15inch Sony VGA monitor \$15.00, weight distributing trailer hitch \$150.00 925-829-3175

MOTORCYCLES

1986 - Fully Custom HD Sportster, custom tanks and paint/murals, springer forks, lots of chrome, dual firing heads, mikuni carb. Runs GREAT \$7,000 OBO 925-784-1788

1997 - yz250, Green sticker, FMF pipe, Renthal bars, extra paddle tire, front pads & fender skidplates, boot guards, runs perfect 209-814-6820

1997 - Suzuki RM 250 R Motorcycle. Excellent condition, runs great, lots of new parts, well maintained. \$2,800.00 OBO 408-223-6633

1996 - Harley Davidson CUSTOM Softail, Black/Chrome, Low Milies, Mint, Must See/Call for info. \$26K invested, Asking \$15,500/Make offer 209-481-4099

MUSIC INSTRUMENTS

Bruenn upright piano, hand carved design with velvet covered stool. \$750 OBO to loving home. 925-997-4047

PETS & SUPPLIES

Free cat. Friendly, quiet, male, fixed, well mannered, house trained. Abandoned at my apt. Landlord says no. Too bad. Named him Mr. Perfect. 925-245-1315

Free: 2 female cats (5 & 7 years) in/out. Spayed. Mousing experience. Son allergic. 209-834-2604

Free - Rabbit, French Lop, 6 months old, cage and food. 925-455-8526

Western pleasure show saddle. One of the last saddles made by Rowell. Berry pattern silver. Matching breast plate. \$2500/or best offer. 925-449-1128

Quarter horse, gelding, 10 years old, fast, used for western timed events. \$2,000/OBO. 925-321-1904

HORSE BOARDING-Daily cleaning, inside stalls, paddocks, riding arena & fenced pasture. 175.00 month 925-240-6311

RECREATION EQUIPMENT

Womens Spirit Northwave Snowboarding Boots. Size 6.5. Good Condition, Paid \$200 New Asking \$50.00 925-443-7752

Snowboard Melvin Mfg. - MV-0i 170: size 10 boots, step-in bindings. Good beginner board. Cheaper than renting! First \$100 takes all. 925-455-4528

RIDESHARING

Express your commute, call 2-RIDE for more information or visit <http://www.r.llnl.gov/tsm>

Manteca - Rider/Drivers Wanted for carpool. Work 8-4:30pm. 209-823-5085, ext. 2-0643

Ceres/Modesto - Looking for riders for a potential 9/80 vanpool. 209-537-0229, ext. 3-6631

Sonora - Carpool rider needed. Flexible hours. Leave from Sonora, Columbia or Jamestown to LLNL. 209-588-8733, ext. 4-3919

Manteca - Working 9/80s? Ride with us four days a week. 209-823-8309, ext. 2-8669

Lafayette - LaMOrinda Vanpool (also Walnut Creek stop at Rudgear Rd), reclining seats, reading lights, 7:45-4:45, \$100/mo (pretax reduction available) 925-943-6701, ext. 2-3005

Orinda - Amorinda carpool seeks 4th rider/driver. Lab hours 8:10am-5pm. Departs from near St. Stephens and Highway 24. 925-253-0498, ext. 2-9823

SERVICES

Exterior House Painting, 18 yrs exp. 209-430-4934

support group for better relationships! coda codependents anonymous meets tuesday noon b571/r2016 welcome! just come or info 925-447-7070

affordable tax preparation: licensed, bonded tax preparer specializes in tax preparation alone. will work with your schedule. call: 209-832-4335

pet/house sitting-reasonable rates, experienced, reliable, please call for info 925-980-0310

Family Daycare - Opening available for pre-school child 15 months to 4 years old. Open 7:30am to 5:30pm weekdays. Excellent references. 925-443-6549

SHARED HOUSING

Springtown - Share 3 bedroom, 2 bath house. 1 roommate needed. Rent \$450 + 1/3 utilities. No smoking, no pets. Full privileges. 925-980-6478

TRACY, - Rooms for rent, 3 available, \$350 to 425/month. Plus Util. and Deposit. Full Privileges. Call 209-832-4335

Hayward - Three rooms-private bath for rent to a single person. Pool table and hot tub. Includes internet. No pets. No Smoking. 1/3 utilities. Near Bart. 510-733-6989

Livermore - 1 bd w/priv. ba avail. in 3 bd/2ba house Feb 1. \$700 + \$500 dep. + 1/2 util. Pool, hot tub, fruit trees. 10 min. to lab. Full privileges. 510-821-0046

Livermore - Room for rent in four bedroom home. Full privileges, N/S,

N/P, deposit required, 1/3 utilities, \$535.00/mo. 925-292-3356 or 925-447-2670

Livermore - 1 room for rent in a 4 BR, 1800 sq. ft. house SE part of town. 6 mi from Lab. \$535/mo + 1/3 util. \$300 Deposit. Full privileges, N/S, N/P. 925-292-3356

Livermore, CA - shared rental, 1 bedroom for rent in 4 bedroom house, nonsmoking, \$500 month -dep, share utilities. 925-960-1621

TRUCKS & TRAILERS

2000 - Dodge Dakota 4WD, club cab, 26k miles, 4.7LV8, auto, AC, PS, PB, pwr win/locks, cruise, AM/FM/cas, alarm, ABS, bed liner. Excellent cond. \$16,800 OBO. 925-245-9904

2002 - 2002 Chevy Truck 1500, LS, Red, w/gray leather, lowered, Billet wheels. Looks Sharp! Great Condition! Low Miles. \$23K (OBO) Call (925) 989-6976 or 925-373-8244

1985 - Chevy Suburban, needs some cosmetic work. \$1,000 or BO. 209-956-3718

1978 - Chevy Luv, lowered, 16 inch wheels, runs good, good gas mileage, must sell, \$1500. O.B.O. 209-321-3143

1960 - F-100 Longbed. 292 Y-Block, Automatic trans, 99.9% Rust Free, New interior, headliner, WWW tires, Recent Paint, Runs great, Daily driver. \$3600/obo 925-961-0462

1962 - Ford F-100 Custom Cab, Unibody construction, long bed, 292 V-8, Automatic Transmission, brand new generator & regulator, runs good. \$2800/obo. 209-599-7678

1971 - GMC 3500 All original 73K miles show room condition loaded \$7K 925-447-6728

01 - Chevy S10 2R2 4x4 Extended Cab All extras \$16,500 925-755-0335

1995 - XLT Explorer, 4X4, 64K, Excel Condition \$8900 209-836-2658

1995 - Plymouth Voyager SE. 114K miles. 3.3/V-6, Quad seating, ABS, A/C, power everything, roof rack, etc. Excellent condition inside, VG outside. \$4,000. 925-830-1868

1986 - S10 Pickup, new motor with less than 10K miles, new brakes, new tires, automatic transmission, CD, must sell, \$2200 OBO. 209-239-4979

1998 - Ford Explorer, XLT, 4WD, excel cond, transferable 90K warranty, 60K serviced, new brakes, please call for details, \$12,250/OBO, Victor. 925-462-0468

VACATION RENTALS

Mau, HI - Kahana Reef oceanfront 1BR/1BA condominium. Beautiful two-island view, oceanside pool, and BBQs. Low LLNL rates for year-round reservations. 925-449-0761

Mau: Kihel - New everything 3Bdrm 2Ba Home. Walking distance to beaches, shopping, restaurants. Two week min. LLNL Rates. Ask about monthly discounts. 925-443-1172

MAUI-Kihel 1,2&3 bedroom condos. On beach, large pool, tennis courts, putting green, near golf course. Beautiful grounds, near golf course. 925-846-8405

WANTED

Moving Boxes - Will pick up at your convenience 209-836-2511

HouseKeeper needed in our Tracy home 3 to 4 hours every week. Experienced only and references preferred. 209-832-3435

Tutor needed for high school junior - geometry 925-373-9128

Need frame for twin bed. 925-449-6048

CLEMENTINE

Continued from page 1

What Clementine produced in images is more than anyone working on the project could have ever imagined: hundreds of detailed images of the moon's surface all appeared on the computer screens of Lawrence Livermore and Naval Research Laboratory scientists holed up in the "BATCAVE" in Alexandria, Va. (BATCAVE, or Bendix Alexandria Technical Center for Aerospace Vehicle Experiments, served as Clementine's mission planning, spacecraft control and data processing center.)

These were the most detailed images of the moon to date and were a somewhat unexpected surprise to the Laboratory scientists who worked on the imaging technology.

"The odds of getting it all to work in your favor is quite an amazing feeling," said Bob Priest, the Lab's mechanical technical lead on Clementine. "It became a pinnacle in a lot of people's careers. Seeing those first images come down was an emotional feeling, one of huge relief and strong elation."

Livermore's role in Clementine resulted from shelf-ready technology originally developed for the Brilliant Pebbles space missile defense project. When Brilliant Pebbles was cancelled in the early 1990s, Livermore scientists were looking for a new project where some of the sensors developed for Brilliant Pebbles could be applied to an exploratory space mission.

Clementine fit the bill.

"We just needed a ride," said Bruce Tarter, an associate director at large who was associate director of Physics at the time of Clementine's development. "Once Brilliant Pebbles was cancelled, we wanted some way to test the instruments. This was a space application of strategic defense initiative (SDI) technology."

While the Naval Research Laboratory built the space bus, Livermore delivered the sensors that included a number of cameras — which brought back the detailed images of the moon — and the Star tracker that helped determine the spacecraft's altitude.

"It was an absolutely amazing feat. Without Livermore, nothing would have happened," Tarter said. "It was a huge deal for the world."

The Clementine Program, made up of a team from the then Ballistic Missile Defense Organization (BMDO), NRL, LLNL, NASA and industry, demonstrated how a low-cost, high-value space exploration mission could be achieved in a relatively short amount of time.

At least a dozen LLNL employees worked on the project. Participants included: O Program Leader Lowell Wood, Project Leader Lyn Pleasance; the late Michael Shannon, who

served as deputy project leader; Joe Kordas, electrical technical lead; Priest, mechanical technical lead; Izzy Lewis, optical technical lead; Hye-Sook Park, calibration technical lead; Diana Sackett, software technical lead; former Lab employee Mike Richardson, LIDAR technical lead, and Rob Hills, spacecraft integration technical lead.

"It was the first opportunity for anybody to make a spacecraft for less than \$100 million in about 24 months," said Hills, who served as Clementine's systems integrator in charge of quality control. "NASA changed their business because of what we did."

Indeed, Clementine triggered a change in NASA's timetable for missions to begin a cheaper, better and faster space program. Additionally, some of the same sensor technology used on Clementine was fine-tuned for the Mars Explorer mission that spent an entire Martian year — 687 Earth days — mapping the surface of Mars from an altitude of 240 miles. From that mission, hundreds of images were collected from high-resolution cameras that resolved detail as small as 10 feet.

Hills, who now works in the Engineering Directorate but worked in Washington D.C. for 20 months during the Clementine mission, said working on the project was an exciting time during his career at the Lab.

"For me it was fun. I was a single guy and had no life," he said. "If you worked 80 hours per week, you enjoyed it. You didn't do it for the pay. This program was like a trip to Disneyland."

The Strategic Defense Initiative Organization and NRL worked out details of tracking support with NASA's Deep Space Network to keep daily track of Clementine's mission to test the latest space-based imaging components using the moon and a near-Earth asteroid as celestial targets.

The Ballistic Missile Defense Organization



FILE PHOTO

The Clementine satellite brought back the most detailed images of the moon's surface that any scientist had ever seen to date. Livermore delivered the sensors that included a number of cameras and the Startracker.

(formerly SDIO) financed the project and assigned design, construction and mission execution to NRL while Livermore was responsible for lightweight imaging sensors and software algorithms.

Pleasance said after the Clementine mission funding and interest in a second mission somewhat died out.

"It's amazing that it made two lunar orbits and produced those kinds of images," said Priest, who worked on the project from its inception in March 1992 until O program closed down.

BUCKYBALL

Continued from page 1

This distribution of atoms minimizes the tendency of nitrogen atoms to repel one another and destabilize the structure. The researchers proposed this to be the most stable structure for C48N12.

But after running calculations of their own, the Lab group uncovered yet another “novel” C48N12 structure with “lower energy” and even greater stability. Stability in their molecule comes from a more complex structure containing eight all-carbon hexagonal rings.

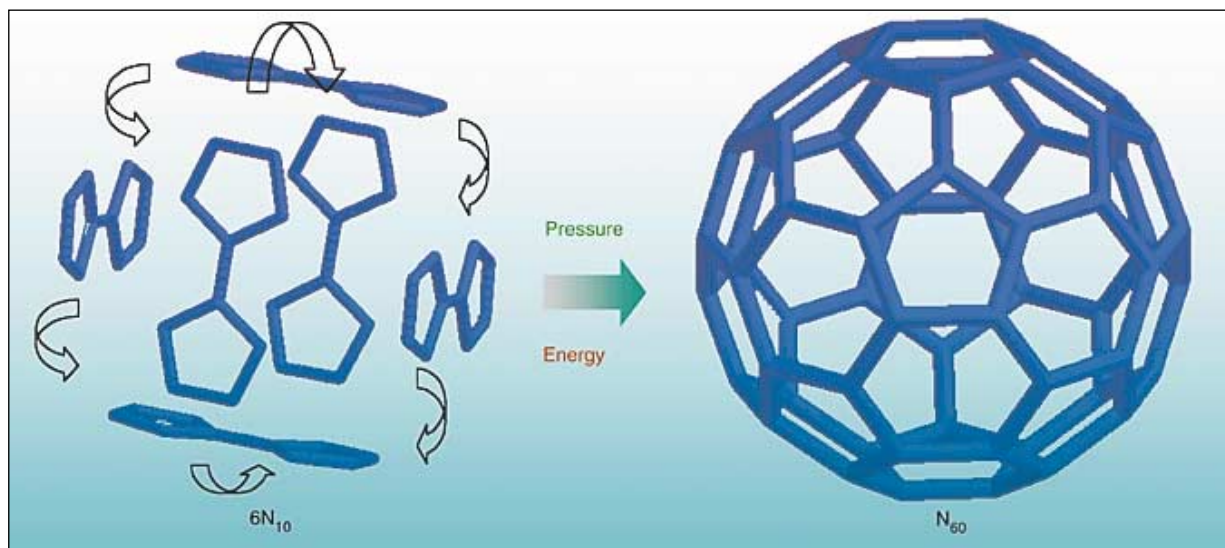
The new nanostructured material is highly elastic, resilient and hard, which makes it ideal for wear protective applications, such as orthopedic implants, as well as providing a basis for synthesizing similar nitrogen-substituted fullerenes with equally novel structural, electronic and conducting properties.

“The students were here for just six weeks. This study was a unique opportunity. They will get a number of publications out of this,” Manaa said. “It was really exciting to see.”

While buckyballs were hailed as a potential super material when they were discovered, development of applications and uses has been slow because of the prohibitive costs of producing quantities of synthesized materials and some properties of C60.

“The buckyball has certain properties we need and some we don’t need,” Manaa said.

Manaa works in the Chemistry and Materials



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In earlier research, Manaa demonstrated the formation of a Nitrogen fullerene (N₆₀) from a combination of six molecular units of N₁₀. See the June 2001 S&TR for more information.

Science Directorate’s Chemical Engineering Division where he investigates “novel energetic materials” and conducts simulations of energetic materials in extreme conditions as part of the Advanced Simulation and Computing (ASCI) program.

Scientists have been experimenting with the synthesis of fullerenes using other elements such as nitrogen to “fine-tune” properties that don’t exist in C60 and reduce the cost of producing nanostruc-

tured materials.

In addition to buckyballs, scientists have developed “nanotubes,” cylinder-shaped molecules that resemble a roll of chicken wire. Researchers believe these atomic building blocks may one day be used to create nano-scale machines and electronic devices.

Manaa hopes to get Laboratory Directed Research and Development (LDRD) funding to build on the research conducted so far.

JGI

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be to engage scientists at the DOE labs and the broader scientific community as users of the huge data sets being produced by the JGI’s banks of DNA sequencers. “With this data we can do many unique things in science,” he said.

Rubin received his B.A. degree in physics from UC-San Diego, his M.D. from the University of Rochester Medical Center and his Ph.D. in biophysics from the University of Rochester. Following a genetics fellowship at UC San Francisco, he became a research associate at the Howard Hughes Medical Institute.

Rubin joined LBNL in 1988 and became head

of the lab’s Genome Sciences Department in 1998. His research has involved the development of computational and biological approaches to the analysis of DNA sequence data.

Rubin’s most recent work, supported by a Genomic Applications Program funded by the National Institutes of Health (NIH), has emphasized the use of large scale cross-species DNA sequence comparisons to identify regions of the human genome that encode important biological functions.

Rubin has been active in the Human Genome Project both in the United States and internationally. He served as co-chair of the Cold Spring Harbor Genome Sequencing and Biology Meeting and was scientific chair of the International Human

Genome Organization.

The Joint Genome Institute, established in 1997, is one of the largest and most productive publicly funded genome sequencing centers in the world. For the Human Genome Project, JGI sequenced human chromosomes 5, 16 and 19, which together constitute 11 percent of the human genome. JGI sequenced mouse DNA related to human chromosome 19 to illuminate the molecular evolutionary history of the two species, and last year it completed draft sequences of the pufferfish *Fugu rubripes* and the sea squirt *Ciona intestinalis*. Additional information and progress reports on JGI projects, including daily updates of sequence information and assembly statistics, are available at www.jgi.doe.gov

FUSION

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cost of construction and operation.”

Abraham made the announcement during remarks to employees of the Princeton Plasma Physics Laboratory following a tour of the laboratory.

The Bush administration believes that fusion is a key element in U.S. long-term energy plans because fusion offers the potential for plentiful, safe and environmentally benign energy. A fusion power plant would produce no greenhouse gas emissions, use abundant and widely distributed sources of fuel, shut down easily, require no fissionable materials, operate in a continuous mode to meet demand and produce manageable radioactive waste.

ITER will provide 500 megawatts of fusion power for 500 seconds or longer during each individual fusion experiment.

The project will demonstrate essential fusion energy technologies in a system that integrates physics and technology and will test key elements required to use fusion as a practical energy source. It will be the first fusion device to produce a burning plasma and to operate at a high power level for such long duration experiments. The fusion power produced in the ITER plasma will be 10 times greater than the external power added to the plasma.

Canada, the European Union, Japan and the Russian Federation are the current members of the collaboration who have been negotiating ITER construction and operation since last year. China has recently joined the negotiations as well.

Candidate sites in Canada, the European Union and Japan have been offered, one of which will be

selected during the negotiation and governmental decision-making process.

Lawrence Livermore National Laboratory has been a key research facility in the field of fusion energy.

John Lindl, LLNL’s Fusion Energy Program Leader, reacted enthusiastically to the announcement, terming it “the most supportive speech for fusion from any administration that I have heard in my 30 years of work in the field.”

“The speech did not just announce that the US would rejoin ITER negotiations, but promised a strengthened U.S. program which would explore a wide range of approaches to fusion. Both parts of this initiative are essential to the health of fusion research in the U.S.,” said Lindl.

The U.S. proposes to provide a number of hardware components for ITER construction, to be involved in the project construction management and to participate in the ITER scientific research and technology development. The nature and details of the U.S. participation and contributions would be determined during the negotiations. DOE’s Office of Science, which has extensive experience in large, international programs, will lead U.S. negotiations on ITER.

The construction cost for ITER, including buildings, hardware, installation and personnel, is estimated to be about \$5 billion in constant 2002 dollars. However, since the cost will be shared among all of the parties, who will provide most of the components “in kind,” the actual construction cost will be a combination of different amounts in different currencies. The U.S. share of the construction cost is expected to be about 10 percent of the total. ITER could begin construction in 2006 and be operational in 2014. Fusion research would

last for up to 20 years.

For the complete announcement see the Web at <http://www.energy.gov/HQPress/releases03/janpr/pr03026.htm>



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